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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,779	01/19/2007	Hideki Uchida	2006_0891A	5037

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Washington, DC 20005-1503

EXAMINER
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CAZAN, LIVIUS RADU

ART UNIT	PAPER NUMBER
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3729

NOTIFICATION DATE	DELIVERY MODE
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08/05/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ddalecki@wenderoth.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/582,779	<b>Applicant(s)</b> UCHIDA ET AL.	
	<b>Examiner</b> LIVIOUS R. CAZAN	<b>Art Unit</b> 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22 and 25-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 is/are allowed.
- 6) ☒ Claim(s) 25-42 is/are rejected.
- 7) ☒ Claim(s) 43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. **Claims 25 and 34 are rejected under 35 U.S.C. 102(a) as being anticipated by Fukuda (JP10173394A). Also refer to the Machine Translation.**

3. Fukuda discloses (refer to Fig. 5 and para. [0005]-[0006] of the Machine Translation) a component mounting head comprising: a suction nozzle (5) including a suction-and-holding face (6) for sucking and holding the component, wherein a suction hole (7) is defined in the suction-and-holding face, the suction hole having a main hole portion (central portion) and five extended hole portions (five of the six radial portions of the hole 7), wherein the main hole portion is formed in a circular shape or a generally circular shape and is concentric with an axial center of the suction nozzle, wherein the five extended hole portions extend from the main hole portion in five radial directions, respectively, at a generally uniform angular pitch (see Fig. 5), and wherein the five extended hole portions are integrally formed with the main hole portion such that the suction hole constitutes a single hole formed collectively by the main hole portion and the five extended hole portions. Note that the claim does not specify the reference point for the angular pitch. If we number the extended hole portions as 1-6, starting with the top left in fig 5 and moving clockwise, then the angle between 1 and 2 and between 2

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and 3 is the same. The angle between 4 and 5 and between 5 and 6 is the same. The pitch is therefore uniform. Moreover, the claim requires a generally uniform angular pitch.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 25-27, 30, 31, 34-36, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seno (US4794689) in view of Fukuda.**

6. Seno discloses a component mounting head (6), wherein a suction nozzle (9) is operable to suck and hold at a component extraction position (S1) components fed from a component feed cassette (22), the component feed cassette accommodating a plurality of the components and feeding out the accommodated components along a component feed direction such that the components are positioned at the component extraction position.

7. However, Seno does not disclose a suction nozzle as claimed in claims 25 and 34, wherein the suction nozzle is arranged such that the component feed direction of the component feed cassette is coincident with an extending direction of one of the extended hole portions.

8. As described above, Fukuda discloses such a vacuum nozzle as in claims 25 and 34.

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9. At the time the invention was made, one of ordinary skill in the art would have found it obvious to modify Seno to use a nozzle such as that of Fukuda, in order to take advantage of the benefits of this nozzle over conventional types. Moreover, it should be noted that, inherently, the component feed direction of the feed cassette would be coincident with an extending direction in which one of the end-portion extended portions is extended.

10. **Regarding claims 27 and 36**, given a main hole portion having a diameter  $d$ , a diameter of an outer circumferential end portion of the suction-and-holding face is approximately  $3d$ , a width of each of the extended hole portions is approximately  $0.4d$ , and a distance from an axial center of the main hole portion to a distal end of each extended hole portion is approximately  $2d$ .

11. **Regarding claims 30, 31, 39, and 40** the suction-and-holding face will, inherently, have at least a few depressed/projected portions of *about* 10-20 microns in depth/height. The claims do not establish what is meant by "communicated with each other". The mere fact that the outer circumferential end portion and the suction hole define inner and outer extents of the end of the nozzle, they are "communicated with each other".

12. **Claims 25, 28, 29, 32-34, 37, 38, 41, and 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda in view of Kanai (JP2002307359A) and vice versa.

13. Fukuda discloses the same invention as in claims 25 and 34, above, but does not disclose the features claimed in claims 28, 29, 31-33, 37, 38, and 40-42.

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14. **Regarding claims 28 and 37**, Kanai discloses a projecting member (28) having a tip end portion (29), the projecting member being disposed within the main hole portion for sliding between a projective position (see Fig. 3) in which the tip end portion is projected from the suction-and-holding face and an accommodated position (see Fig. 6) in which the tip end portion of the projecting member is positioned more inwardly toward the suction-and-holding face than in the projective position; and a biasing member (21) for biasing the projecting member toward the projective position.

**Regarding claims 32 and 41**, Kanai discloses an auxiliary suction member (22) which is formed from an elastic material, the auxiliary suction member having an inner circumferential end portion and an outer circumferential end portion, wherein the inner circumferential end portion of the auxiliary suction member is placed in close contact with an outer circumferential portion of the suction nozzle (see figures), wherein the outer circumferential end portion of the auxiliary suction member projects outwardly from a circumferential portion of the suction-and-holding face (see Fig. 2), and wherein the outer circumferential end portion of said auxiliary suction member is placed at a position generally equal in height to the suction-and-holding face or slightly backward of the suction-and-holding face (see Fig. 2). **Regarding claims 33 and 42**, the suction nozzle includes an auxiliary suction member fitting portion (on which 22 is mounted; Fig. 2) which is set at an outer circumferential portion thereof so that the inner circumferential end portion of the auxiliary suction member is attached thereto and detachable therefrom, and the auxiliary suction member is selectively attached to the

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auxiliary suction member fitting portion depending on size of the component to be sucked and held (see Fig. 2 and compare with Applicant's figure 11).

15. At the time the invention was made, one of ordinary skill in the art would have found it obvious to combine the teachings of Fukuda and Kanai, to obtain a mounting head as claimed, in order to take advantage of the features offered by both types of nozzles. In particular, a projecting member such as in Kanai would pass through the main hole portion. The other features of Kanai would be on the outside of the nozzle of Fukuda.

16. **Regarding claims 29 and 38**, the tip end portion of some projecting member of Kanai is not disclosed as being formed from a semiconductor ceramic.

17. However, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize the claimed material, because selecting a known material based on its suitability for the intended application only requires routine skill in the art.

#### ***Allowable Subject Matter***

18. **Claim 22** is allowed.

19. **Claim 43** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

20. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

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21. Respectfully, in future amendments, Applicant is asked to present the amendments in the already submitted claims, rather than cancelling claims and presenting new ones, so as to allow the Examiner to more easily distinguish the changes made to the claims.

***Conclusion***

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIVIUS R. CAZAN whose telephone number is (571)272-8032. The examiner can normally be reached on M-F 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DERRIS H. BANKS can be reached on (571) 272-4419. The fax phone



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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. Dexter Tugbang/  
Primary Examiner  
Art Unit 3729

/L. R. C./ 7/31/2010  
Examiner, Art Unit 3729